



X-Plain™ *Melanoma*

Reference Summary

Melanoma is the most serious cancer of the skin. In the United States, the number of new cases of melanoma has more than doubled in the past 20 years.

If detected early, melanoma can be successfully treated by surgically removing it.

This patient education program explains the causes, diagnosis, and treatment options of melanoma. It also discusses some prevention tips.

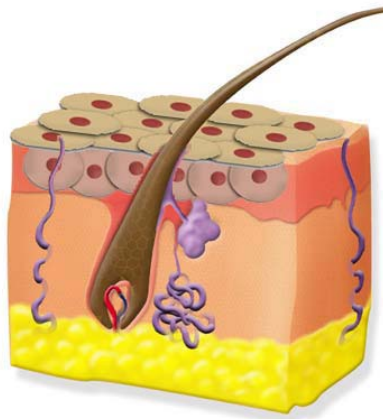
Skin Anatomy

The skin is the body's largest organ. It protects us against heat, sunlight, injury, and infection. It helps regulate body temperature, stores water and fat, and produces vitamin D.

The skin has 2 main layers: the outer epidermis and the inner dermis.

The epidermis is mostly made up of flat, scale-like cells called squamous cells. Round cells, called basal cells, lie under the squamous cells in the epidermis. The

lower part of the epidermis also contains melanocytes.



Melanocytes are pigment cells that are found in the lower part of the epidermis. They produce melanin, the pigment that gives skin its natural color. When skin is exposed to the sun, melanocytes produce more pigment, causing the skin to tan, or darken.

The dermis contains blood vessels, lymphatic vessels, hair follicles, and glands. Some of these glands produce sweat, which helps regulate body temperature. Other dermis glands produce sebum, an oily substance that helps keep the skin from drying out. Sweat and sebum

reach the skin's surface through tiny openings called pores.

What is Cancer

The body is made up of very small cells.

Normal cells in the body grow and die in a controlled way.

Sometimes cells keep dividing and growing without normal controls, causing an abnormal growth called a tumor.

If a tumor does not invade nearby tissue and body parts, it is called a benign tumor, or non-cancerous growth. Benign tumors are almost never life-threatening.

If a tumor invades and destroys nearby cells, it is called a malignant tumor, or cancer. Cancer can sometimes be life-threatening.

Cancerous cells sometimes spread to different parts of the body through blood vessels and lymph channels.

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Lymph is a clear fluid produced by the body that drains waste from cells. It travels through special vessels and bean-shaped structures called lymph nodes.

Cancer treatments are used to kill or control abnormally growing cancerous cells.

Cancers in the body are given names, depending on where the cancer started. Cancer that begins in the skin will always be called skin cancer, even if it spreads to other places in the body.

Although doctors can locate where a cancer started, the cause of cancer in each individual patient cannot always be identified.

Cells contain hereditary, or genetic, materials called chromosomes. Chromosomes control the growth of cells.

Cancer always arises from changes that occur in the chromosomes. When the chromosomes in a cell become abnormal, the cell can lose the ability to control its growth.

Sudden changes in genetic material can happen for a variety of reasons. These changes are sometimes inherited.

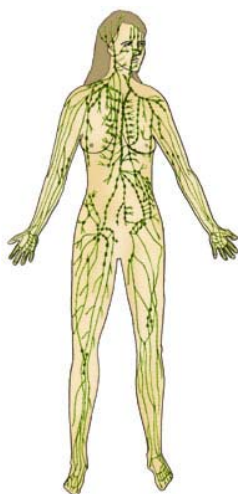
Changes in chromosomes may also occur as a result of exposure to infections, drugs, tobacco, chemicals, or other factors. In the case of skin cancer, sunlight causes damage to the chromosomes, leading to cancer.

Melanoma

Melanoma occurs when the pigment cells, the melanocytes, become malignant.

Currently, we do not fully understand the causes of melanoma. It is clear, however, that it is not contagious; no one can "catch" cancer from another person.

Most pigment cells are in the skin. When melanoma starts in the skin, the disease is called cutaneous melanoma.



Melanoma can also occur in the eye and is called ocular melanoma or intraocular melanoma. Rarely, melanoma may arise in the cover-

ing of the brains, meninges, the digestive tract, lymph nodes, or other areas where melanocytes are found. This program focuses on melanomas that develop on the skin.

Melanoma can occur on any skin surface. In men, it is often found on the head, neck, and area between the shoulders and hips. In women, melanoma often develops on the lower legs.

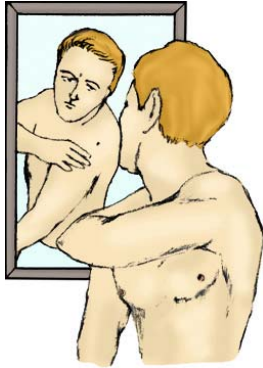
Melanoma is rare in black people and others with dark skin. When it does develop in dark-skinned people, it tends to occur under the fingernails or toenails, on the palms of hands, or soles of feet.

The chance of developing melanoma increases with age, but it affects people of all ages. Melanoma is one of the most common cancers in young adults.

When melanoma spreads, cancer cells are also found in the lymph nodes. If the cancer has reached the lymph nodes, it may mean that cancer cells have spread to other parts of the body such as the liver, lungs, or brain. In such cases, the cancer cells in the new tumor are still melanoma cells, and the disease is called metastatic melanoma.

Symptoms

Often, the first sign of melanoma is a change in the size, shape, color, or feel of an existing mole. Most melanomas have a black or blue-black area.



Most people have moles. Moles are groups of melanocytes that form an abnormal growth. However, they are not cancerous. When surgically removed, they normally do not return. They do not spread through the lymph nodes to internal parts of the body.

How can you distinguish between a benign mole and a cancerous mole? The following sections discuss 4 A-B-C-D tips: asymmetry, border, color, and diameter.

Asymmetry

A melanoma is usually asymmetric, which means it is not usually perfectly round. A non-cancerous mole usually does have symmetry. In melanomas the two halves of

the lesion do not usually look similar.

Border

Melanomas have edges that are ragged, notched, blurred, or irregular in outline

Color

The color of melanomas is uneven. Shades of black, brown, and tan may be present. Areas of white, gray, red, pink, or blue also may be seen.

Diameter

Melanomas are usually larger than the eraser of a pencil (5 mm or 1/4 inch); non-cancerous moles are smaller.

Melanoma can be cured if diagnosed and treated when the tumor is thin and has not deeply invaded the skin. However, if a melanoma is not removed in an early stage, cancer cells may grow down into the skin, invading healthy tissue.

Early melanomas may be found when a pre-existing mole changes slightly. Common changes include changing to black color or forming fine scales.

In more advanced melanoma, the mole becomes thick, deep, hard, or lumpy. It may also itch, ooze, or bleed. Advanced melano-

mas do not usually cause pain.

A skin examination is often part of a routine checkup by a doctor or another health-care provider. People also can check their own skin for new growths or other changes. Changes in the skin or a mole should be reported to a doctor or nurse right away.

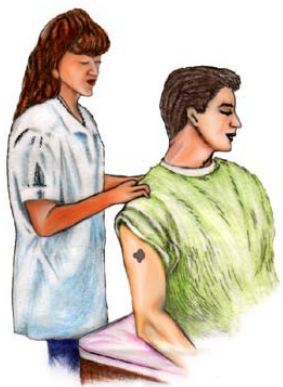
Diagnosis & Staging

If the doctor suspects that a spot on the skin is melanoma, the patient will need to have a biopsy. A biopsy is the only way to make a definite diagnosis. In a biopsy, the doctor tries to remove all suspicious-looking growth.

If there is too much growth to remove entirely, the doctor removes a sample of the tissue. A biopsy can usually be done in the doctor's office using a local anesthetic.

A pathologist then examines the tissue under a microscope to check for cancer cells.

If melanoma is found, the doctor will determine what stage the cancer is in before planning treatment. Removal of nearby lymph nodes for examination under a microscope is sometimes necessary.



The doctor also does a careful physical exam and, depending on the thickness of the tumor, may order chest x-rays; blood tests; and scans of the liver, bones, and brain.

Treatment

A treatment plan for melanoma depends on

- the location and thickness of the tumor
- how deeply the melanoma has invaded the skin
- whether melanoma cells have spread to nearby lymph nodes or other parts of the body.
- the patient's age and general health

The standard treatment for melanoma is surgery; in some cases, the doctor may also use chemotherapy, biological therapy, or radiation therapy. The doctor may decide to use one treatment method or a combination of methods.

Surgery to remove a melanoma is the standard treatment. It is necessary to remove not only the tumor but also some normal tissue around it in order to minimize the chance that any cancer gets left behind.

If a large area of tissue is removed, a skin graft may be done. For this procedure, the doctor uses skin from another part of the body to replace the skin that was removed.

Lymph nodes near the tumor may be removed during surgery because cancer can spread through the lymphatic system. If the pathologist finds cancer cells in the lymph nodes, it may mean that the disease has spread to other parts of the body.

Surgery is generally not effective in controlling melanoma that has spread to other parts of the body. In such cases, doctors may use other methods of treatment, such as chemotherapy, biological therapy, radiation therapy, or a combination of these methods

The side effects of cancer treatment mainly depend on the type and extent of treatment. Side effects may not be the same for everyone, and they may change from one treatment to the next.

Prevention & Risk Factors

Doctors believe that the increase in cases of melanoma is mostly related to an increase in the amount of time people spend in the sun. Scientists believe that UV radiation from the sun can cause melanoma.

Artificial sources of UV radiation, such as sunlamps and tanning booths, can also cause skin damage and probably an increased risk of melanoma.

To help prevent and reduce the risk of melanoma caused by UV radiation, people should avoid exposure to the midday sun. Wearing a hat and long sleeves offers protection.

Lotion, cream, or gel that contains sunscreen can help protect the skin. Those with an SPF (sun protection factor) of 30 or higher provide high protection against sunburn.

Sunglasses that have UV-absorbing lenses should also be worn. The label should specify that the lenses block at least 99% of UVA and UVB radiation.

Melanoma can be cured if detected early. Early detection involves regularly checking your body for skin growths that have changes

in symmetry, color, texture, and size.

You are more likely to have melanoma if any of the melanoma risk factors apply to you.

The following are risk factors for melanoma:

- 1) Having 2 or more close relatives who have had melanoma
- 2) Having abnormal moles
- 3) Having had melanoma before
- 4) Having more than 50 moles
- 5) Having had one or more severe sunburns as a child or teenager
- 6) Having fair skin that burns easily in the sun

If you have one or more melanoma risk factors, you should check your skin regularly and have regular skin exams by a doctor or nurse specialist.

Summary

Melanoma is a skin cancer where pigment cells start growing abnormally. The best chance for a cure is surgery if the cancer is discovered early.

It is necessary to check with a doctor or nurse as soon as you notice any change in any of your moles.

Staying away from the sun and avoiding sun tanning are the most important things anyone can do to prevent melanoma.



Regular examinations of the skin for abnormal growths are essential for early detection.

Thanks to advances in medicine, melanoma can be successfully treated and cured if detected early.